

Adding, Subtracting, Multiplying Radicals

Date_____ Period____

Simplify.

1) $-5\sqrt{3} - 3\sqrt{3}$

2) $2\sqrt{8} - \sqrt{8}$

3) $-4\sqrt{6} - \sqrt{6}$

4) $-3\sqrt{5} + 2\sqrt{5}$

5) $-3\sqrt{27} - 3\sqrt{27} - 3\sqrt{27}$

6) $-3\sqrt{12} + 3\sqrt{3} + 3\sqrt{20}$

7) $-2\sqrt{45} - 3\sqrt{20} - 2\sqrt{6}$

8) $-3\sqrt[6]{3} - 2\sqrt[6]{192} - \sqrt[6]{320}$

9) $-3\sqrt[3]{-3} + 2\sqrt[3]{162} + 3\sqrt[3]{81}$

10) $4\sqrt[6]{3} + 2\sqrt[4]{32} - 3\sqrt[6]{192} - 2\sqrt[6]{192}$

11) $-\sqrt[3]{320} - 4\sqrt[3]{5} + 2\sqrt[3]{135} + 2\sqrt[3]{16}$

12) $2\sqrt[3]{6} - \sqrt[6]{6} + 3\sqrt[3]{6} - 3\sqrt[6]{384}$

$$13) \sqrt[3]{3} \cdot \sqrt[3]{-20}$$

$$14) \sqrt{5} \cdot \sqrt{3}$$

$$15) \sqrt{6} \cdot \sqrt{2}$$

$$16) \sqrt[3]{3} \cdot \sqrt[3]{9}$$

$$17) 3\sqrt{3}(4 - 3\sqrt{5})$$

$$18) 4\sqrt{15}(-3\sqrt{6} + 5)$$

$$19) 4\sqrt{15}(\sqrt{6} + \sqrt{5})$$

$$20) -\sqrt{2}(\sqrt{10} - 4\sqrt{6})$$

$$21) \sqrt{15}(2\sqrt{10} - 4\sqrt{6})$$

$$22) (-7 + \sqrt{3x})(4 + \sqrt{3x})$$

$$23) (\sqrt{2a} - 5)(7\sqrt{2a} - 5)$$

$$24) (2 + \sqrt{5})(-2 + \sqrt{5k})$$

$$25) (\sqrt{3} + \sqrt{5x})(\sqrt{3} - 5\sqrt{5x})$$

$$26) (7 + \sqrt{6})(1 + \sqrt{6})$$